

**PATENT APPLICATION**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Oji KUNO

Group Art Unit: 1754

Application No.: 10/661,596

Examiner: C. NGUYEN

Filed: September 15, 2003

Docket No.: 117167

For: CERIUM-ZIRCONIUM COMPOSITE METAL OXIDE

**REQUEST FOR RECONSIDERATION**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In reply to the July 25, 2006 Office Action, reconsideration of the rejections is respectfully requested in light of the following remarks.

Claims 1-15 are pending in this application.

I. **Rejection Under 35 U.S.C. §102(e)**

Claims 1-3, 6-10 and 13-14 were rejected under 35 U.S.C. §102(e) as allegedly being anticipated by U.S. Patent No. 6,956,008 ("Takeshima"). This rejection is respectfully traversed.

The Patent Office alleges that the 1.131 Declaration filed on April 18, 2006 did not include Exhibit A, which was the verified English translation of JP 2002-81583. However, the translation was in fact attached to the previously filed Rule 131 Declaration, as confirmed from a review of the Patent Office's image file wrapper. However, for the Examiner's convenience, Applicant is resubmitting the declaration and translation herewith.

Takeshima is a U.S. patent issued on October 18, 2005. The filing date of Takeshima is May 13, 2003. Takeshima is thus available as a reference under 35 U.S.C. §102(e) as of its filing date (May 13, 2003). However, the 37 C.F.R. §1.131 Declaration confirms an invention date for the present claims of at least March 22, 2002. Therefore, the reference is antedated and the rejection should be withdrawn.

For the foregoing reasons, Applicants respectfully submit that the teachings of Takeshima are not prior art to the present claims. Reconsideration and withdrawal of this rejection are respectfully requested.

II. Rejection Under 35 U.S.C. §102(e) or 35 U.S.C. §103(a)

Claims 1-15 were rejected under 35 U.S.C. §102(e) as allegedly anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over, U.S. Patent No. 7,052,777 (hereinafter Brotzman) in view of U.S. Patent No. 5,071,676 (hereinafter Jacobson).

Claim 1 recites a cerium-zirconium composite metal oxide, wherein a total mole number of Ce and Zr is at least 85% based on the total mole number of metal in the composite metal oxide, wherein a molar ratio Ce/Zr is within a range from 1/9 to 9/1, and wherein an isoelectric point of the composite metal oxide is more than 3.5. Claim 4 recites a cerium-zirconium composite metal oxide, wherein a total mole number of Ce and Zr is at least 85% based on the total mole number of metal in the composite metal oxide and wherein CeO<sub>2</sub> forms a core surrounded by ZrO<sub>2</sub>.

The Patent Office alleges that Brotzman inherently teaches the isoelectric point of the present claims because Brotzman allegedly teaches the same cerium-zirconium composite metal oxide as recited in claim 1.

However, the nanoparticles of Brotzman do not necessarily inherently have the same characteristics as the composite metal oxide of claim 1 because the product of Brotzman is prepared in a different manner than the product of independent claim 1. For example, the

product of independent claim 1 is prepared in a manner that produces a composition with an isoelectric point more than 3.5. Therefore, because the product of claim 1 is produced in a different manner than the Brotzman product, it cannot reasonably be concluded that the material in Brotzman inherently has the same isoelectric point as the composite of claim 1.

Brotzman discloses a nanoparticle material comprising a plurality of cores and a plurality of shells where at least one of the cores is encapsulated by one of the shells. The core and shell of the material are separately formed. For example, the nanoparticles are coated to form the shell thereon, thereby forming a core shell structure. See column 3, lines 6-4 and lines 60-63 of Brotzman.

The present application describes a cerium-zirconium composite metal oxide that uses a ceria sol as a source of cerium and is obtained by mixing the ceria sol and a zirconium compound solution or a zirconia sol to prepare the metal oxide composition, and thus is different from the process of Brotzman. See page 5, lines 16-23 of the present specification.

As discussed above, Brotzman does not teach or suggest metal oxide made by the same process as the cerium-zirconium composite metal oxide as recited in the claim 1. The Patent Office thus has no basis to conclude that the composite nanoparticle material of Brotzman always necessarily possesses the required isoelectric point. Thus, Brotzman provides no basis to support the Patent Office's allegation of inherency.

Jacobson does not remedy the deficiencies of Brotzman. Jacobson describes an electroconductive powder composition of antimony-containing tin oxide with an outer layer of hydrous metal oxide having an isoelectric point in the range from about 5 to 9. See the Abstract of Jacobson. Jacobson does not teach or suggest the cerium-zirconium composite metal oxide of the present claims. The isoelectric point of the different materials in Jacobson teaches nothing regarding the isoelectric point of a cerium-zirconium composite metal oxide of the present claims.

Neither Brotzman nor Jacobson, alone or in combination, teach or suggest cerium-zirconium composite metal oxide as recited in claim 1, and claims dependent therefrom. Reconsideration and withdrawal of this rejection are respectfully requested.

For the foregoing reasons, Applicant respectfully submits that Brotzman and Jacobson, alone or in combination, fail to teach or suggest the subject matter of claims 1-15. Reconsideration and withdrawal of this rejection are respectfully requested.

III. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-15 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

  
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